

WHAT IS CLAIMED IS:

1. A method of ciphering call information transferred between a mobile communication terminal and a network, comprising:
 - transmitting a ciphering request for call information from the terminal to the network;
 - transmitting a ciphering authentication request message from the network to the terminal;
 - transmitting a ciphering authentication response message from the terminal to the network in response to the ciphering authentication request message; and
 - transmitting a ciphering activation completion message from the network to the terminal in accordance with the ciphering authentication response message.
2. The method of claim 1, wherein the ciphering authentication request message includes a RAND value.
3. The method of claim 1, wherein the ciphering request is transmitted by the terminal during a time when the call information is being transferred between the terminal and network.
4. The method of claim 1, wherein the ciphering request is transmitted by the terminal during a time when the call information is not being transferred between the terminal and network.

5. The method of claim 1, wherein the call information includes a voice information.
6. The method of claim 1, wherein the call information includes data.
7. A method of ciphering call information transferred between a mobile communication terminal and a network, comprising:
 - transmitting a ciphering request message from the terminal to the network, the ciphering request message including a specific value;
 - computing a key value required for a ciphering activation process based on the specific value, said computing being performed by the network;
 - transmitting a ciphering activation completion message indicating completion of the ciphering activation process; and
 - ciphering the call information to be transferred between the terminal and network.
8. The method of claim 7, wherein the specific value includes an RAND value.
9. The method of claim 7, wherein the ciphering request is transmitted by the terminal during a time when the call information is being transferred between the terminal and network.

10. The method of claim 7, wherein the ciphering request is transmitted by the terminal during a time when the call information is not being transferred between the terminal and network.

11. The method of claim 7, wherein the call information includes a voice information.

12. The method of claim 7, wherein the call information includes data.

13. A method of ciphering call information transferred between a mobile communication terminal and a network, comprising:

transmitting a ciphering request for call information from the terminal to the network;

determining whether a RAND value is included in the ciphering request message received by the network;

if the RAND value is included in the ciphering request message, generating a key value (K_c) required for ciphering using the RAND value, and then transmitting a ciphering activation completion message of the call information to the terminal;

if the RAND value is not included in the ciphering request message, generating a RAND value, computing/storing an SRES value, and transmitting a ciphering authentication request message to the terminal, depending upon whether ciphering activation should be performed or not;

transmitting a ciphering authentication response message including the SRES value from the terminal to the network, in response to the ciphering authentication request message transmitted from the network;

comparing the SRES value transmitted from the terminal with the SRES value stored in the network; and

determining whether ciphering of the call information is available, depending upon whether the two SRES values are equal.

14. The method of claim 13, wherein the ciphering authentication request message includes the RAND value.

15. The method of claim 13, wherein the ciphering request is transmitted by the terminal during a time when the call information is being transferred between the terminal and network.

16. The method of claim 13, wherein the ciphering request is transmitted by the terminal during a time when the call information is not being transferred between the terminal and network.

17. The method of claim 13, further comprising:
if the received ciphering request message does not include the RAND value and ciphering activation should not be performed, transmitting a ciphering authentication unavailable message of the call information from the network to the terminal.
18. The method of claim 13, wherein the call information includes a voice information.
19. The method of claim 13, wherein the call information includes data.
20. A method of deactivating ciphering of call information transferred between a mobile communication terminal and a network, comprising:
transmitting a ciphering deactivation request for the call information from the terminal to the network; and
performing ciphering deactivation and transmitting a ciphering deactivation completion message to the terminal in response to the ciphering deactivation request message.
21. The method of claim 20, wherein the ciphering deactivation request is transmitted by the terminal during a time when the call information is being transferred between the terminal and network.

22. The method of claim 20, wherein the ciphering deactivation request is transmitted by the terminal during a time when the call information is not being transferred between the terminal and network.

23. The method of claim 20, wherein the call information includes a voice information.

24. The method of claim 20, wherein the call information includes data.

25. A method for communicating information in a mobile communication system, comprising:

transmitting a ciphering request from a mobile terminal to a network; and
receiving ciphered information from the network or transmitting ciphered information to the network after acceptance of the ciphering request.

26. The method of claim 25, further comprising:
receiving a ciphering authentication request message from the network, said message including a RAND value used as a condition for performing ciphering activation.

27. The method of claim 25, wherein the ciphering request is transmitted when call information is being transferred between the terminal and network.

28. The method of claim 25, wherein the ciphering request is transmitting when call information is not being transferred between the terminal and network.
29. The method of claim 25, wherein the ciphered information includes voice information.
30. The method of claim 25, wherein the ciphered information includes data.
31. The method of claim 25, wherein the ciphered information includes at least one of SMS information, SS information, and PDP context activation information.
32. A method for communicating information in a mobile communication system, comprising:
receiving a ciphering request from a mobile terminal; and
transmitting ciphered information to the terminal or receiving ciphered information from the terminal in response to the ciphering request.
33. The method of claim 32, further comprising:
transmitting a ciphering authentication request message to the terminal, said message including a RAND value used as a condition for performing ciphering activation.
34. The method of claim 32, wherein the ciphering request is received when call information is being transferred between the terminal and network.

35. The method of claim 32, wherein the ciphering request is received when call information is not being transferred between the terminal and network.

36. The method of claim 32, wherein the ciphered information includes voice information.

37. The method of claim 32, wherein the ciphered information includes data.

38. The method of claim 32, wherein the ciphered information includes at least one of SMS information, SS information, and PDP context activation information.

39. A communications terminal, comprising:
a transceiver which transmits a ciphering request to a mobile network; and
a processor which processes ciphered information received from the network or ciphers information to be transmitted to the network after acceptance of the ciphering request.

40. The terminal of claim 39, wherein the information includes at least one of voice information, data, SMS information, SS information, and PDP context activation information.

41. A mobile communications network controller, comprising:
a receiver which receives a ciphering request from a mobile terminal; and
a processor which ciphers information to be transmitted to the terminal or receives ciphered information from the terminal in response to the ciphering request.
42. The terminal of claim 41, wherein the information includes at least one of voice information, data, SMS information, SS information, and PDP context activation information.
43. A computer-readable medium storing a program for communicating information in a mobile communications system, the program comprising:
a first code section which controls transmission of a ciphering request from a mobile terminal to a network; and
a second code section which processes ciphered information received from the network or ciphers information to be transmitted to the network after acceptance of the ciphering request.
44. A method for communicating information in a mobile communication system, comprising:
receiving an input signal for terminating ciphering of call information; and
transmitting a ciphering deactivation request from a mobile terminal to a network in response to the input signal.

45. The method of claim 44, wherein the signal is generated by user input.
46. The method of claim 44, wherein the call information includes at least one of voice information, data, SMS information, SS information, and PDP context activation information.
47. A method for communicating information in a mobile communication system, comprising:
receiving a ciphering deactivation request from a mobile terminal; and
terminating ciphering of call information to be transmitted to the terminal.
48. The method of claim 47, wherein the call information includes at least one of voice information, data, SMS information, SS information, and PDP context activation information.
49. A communications terminal, comprising:
a processor which generates a ciphering deactivation request; and
a transmitter which transmits the request to a mobile network.

50. The terminal of claim 49, wherein the processor generates the request in response to a user input.

51. A mobile communications network controller, comprising:
a receiver which receives a ciphering deactivation request from a mobile terminal; and
a processor which terminates ciphering of call information to be transmitted to the terminal.

52. The controller of claim 51, wherein the call information includes at least one of voice information, data, SMS information, SS information, and PDP context activation information.